

REMARKS

The Office Action dated November 2, 2004 has been fully considered by the Applicant. Independent Claims 1 and 9 have each been amended to clearly convey the invention. The conference interview with Examiner Hoye on February 28, 2005 is gratefully acknowledged.

The rejection of Claims 1 and 9 under 35 U.S.C. 112 has been addressed by the amendments to Claims 1 and 9. Support for the amendment has been found at page 4, second and third paragraphs, and page 5, third paragraph.

The rejection of Claims 1 through 13 under 35 U.S.C. 103(a) as being unpatentable over Blatter et al. (U.S. Patent No. 5,754,651) in view of Magee et al. (U.S. Patent No. 5,835,493) is respectfully traversed. There are two distinguishing features in the present invention. First, the entire streams of data are received and demultiplexed. Thereafter, packets of data are selected and the packet identifiers (PIDs) are remapped only. Finally, the selected packets of data and PIDs from multiple streams are multiplexed into a single data stream.

A second distinguishing feature is the combination of data packets from multiple, different streams into a single data stream. In the present invention, the entire data streams are demultiplexed including both the data packets and PIDs but then only the PIDs corresponding to the selected data packets are remapped (no further processing of the selected data packets being required), the remapped PIDs and the selected data packets (otherwise unchanged) then being multiplexed into a single data stream.

With regard to nonobviousness, Blatter teaches to a broadcast data receiver which can process and remap PIDs in a data transport stream under the local control of the receiver. However, while the receiver in Blatter can process data transport streams from two different sources, these

transport streams are never processed and merged simultaneously by the receiver as indicated at col. 4, lines 44-47 where it states “mux 37 selects either, the transport stream from unit 35 or in a playback mode, a data stream from storage device 90”. As such, Blatter does not teach to combining selected data packets from a plurality of data streams to form a single data stream, wherein only the PIDs relating to the selected data packets are remapped prior to multiplexing.

Furthermore, Blatter teaches to “the formation of program specific information” (PSI) (col. 1, lines 11-15) and condensing PSI from a single data stream and reinserting the condensed PSI into a single data stream to reduce the processing and storage overhead imposed by PSI (col. 2, lines 25-32). Thus in Blatter, rather than the PIDs/PSI simply being remapped, the PIDs/PSI are being removed, condensed and reinserted back into a data stream. This takes up significant amounts of processing memory compared to the present invention where there is no requirement to form or condense PIDs/PSI but simply remap the PSI/PIDs. Furthermore, Blatter only teaches formation and condensing of PSI from a single data stream to create a single data stream.

The burdensome and necessary process for forming and condensing the PSI is detailed at col. 7, lines 34-37; col. 7, lines 64-68, wherein “the controller 115 captures in its internal memory the PAT. . . data that comprises the full PSI of the transport datastream. . . .” and “controller 115, in step 225, forms condensed condensed PSI (cPSI) for the programs selected for storage from the full PSI captured from the transport data streams input system”. Having created the PSI, Blatter finds that the packets are different sizes to the original PSI it is intended to replace and consequently has to recalculate the packet headers and other ancillary indicators (col. 13, lines 23-24).

Blatter rennumbers (re-maps) the PIDs of the program components of the single input transport stream for the purpose of 1) simplifying the generation of cPSI and 2) simplify decoding (col. 8, lines 23-24).

Blatter creates his own problem when trying to store two program components (again derived from only a single transport stream, where the two program components originally had unique, unambiguous PIDs). col. 8, lines 17-18 “. . .corresponding elementary streams for the two programs are given the same PID. . .” And col. 8, lines 25-26 “however, renumbering the PIDs in this way introduces potential PID ambiguity”.

Blatter acknowledges at col. 8, lines 40-44 that alternate re-mapping schemes such as changing the base value of PID remapping for each set of program components is known. Blatter also acknowledges that in col. 8, lines 47-49 that they could have recorded the stream without any PID remapping. This is not possible in the present invention wherein the PID collisions and the need to remap is caused by the merging of at least two different transport streams. Blatter provides no teaching on how to resolve this problem. Changing the base remapping of the PIDs still needs to be either known a priori (fixed as a common standard/method) or signaled by providing PSI so the receiver can find the programs and process them. In the present invention, there is neither a need to fix the mapping or insert PSI to indicate the base offsets - the unique situation of having multiple transport sources that need to be merged for subsequent processing allows the local process, in control of the source PID remapping, to merge the streams without causing PID ambiguity and yet still recover the source of the streams when they are subsequently processed. None of this requires the additional burden of generating and inserting ancillary PSI packets as taught by Blatter.

Thus, Blatter provides no teaching to how multiple transport streams can be combined together simultaneously to form a single data stream, to the problem of the present invention of preventing identifier clashes between packets of data from different transport streams or to the solution of the present invention of only remapping the PIDs corresponding to the selected data packets under the local control of the receiver to prevent such clashes. The present invention

achieves the solution without using significant amounts of processing power/memory thereby providing a significant advantage. In summary, amended claim 1 is nonobvious over Blatter.

Magee is directed to the problem of providing a remultiplexing system which allows the merging of several transport streams together to form one or more output streams. However, since Magee is typically found at a headend of broadcast system and not at a receiver end, additional ancillary service information is required to be inserted into the transport stream to allow receiver devices to receive the merged transport stream and reliably process the received data. Magee states at col. 6, lines 13-34 that one way of doing this would be to reconcile and combine the data contained within the PATs. There is no requirement to do this in the present invention and Magee provides no teaching to remapping PID data only of selected data packets under the local control of the receiver as in the present invention. As such, Magee does not teach to the present invention as defined in amended claim 1.

As highlighted by the Examiner, Magee states at col. 8, lines 1-8, that “the remultiplexer provides a simple reconfigurable architecture which utilizes the PIDs of inputted transport packets as a basis of extracting, capturing, discarding and replacing inputted transport packets. The present invention is significantly simpler than that in Magee since there is no requirement to replace inputted transport packets. Magee restates the importance of being able to replace the transport packets in col. 10, lines 15-18 “thus the PAT in each received transport stream must be discarded and a new PAT reflecting the contents of the to-be-remultiplexed stream must be substituted”. In the present invention the PATs are not discarded and a new PAT is not constructed and inserted into the stream. The ability of the present invention to maintain local database which controls the PID remapping of the incoming data streams is sufficient in itself to allow resultant, merged transport stream to be subsequently successfully processed. Thus the solution and advantage of the present invention have

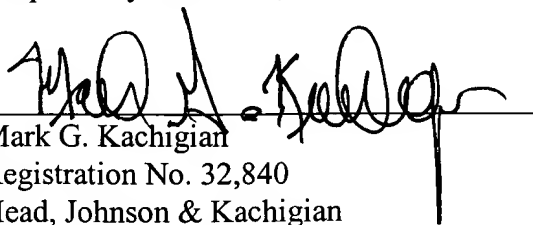
not been appreciated by Magee. Furthermore, if a skilled person were to take the teaching of Magee relating to remapping of PIDs only, the invention in Magee would not work since a receiver would not be able to recognize the transport stream sent and would not be able to decode it. As such, amended claim 1 is inventive of Magee.

Since Blatter does not address the problem or a solution of merging multiple transport streams to form a single transport stream there would be no incentive for a skilled person to combine the teachings in Blatter and Magee together to arrive at the present invention. Even if the teachings in Blatter and Magee were combined, both documents teach to manipulating other data in the data stream in addition to the PIDs which uses significant processing speed and memory and therefore the combination of teaching in the documents would not result in the present invention or the advantages provided by the present invention. As such, amended Claim 1 is not obvious over the combination of teachings in Blatter and Magee.

Enclosed is a Request for a One-Month Extension of Time and a check in the amount of \$120 for the extension fee.

It is believed the foregoing is fully responsive to the outstanding action and that the application is now in condition for allowance and such action is earnestly solicited.

Respectfully submitted,



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